DOCUMENT RESUME

ED 419 818 TM 028 393

AUTHOR	Meyer, Lynne E.
TITLE	Models for Primary Care Residency Program Evaluation.
PUB DATE	1998-04-00
NOTE	19p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Diego, CA, April 13-17, 1998).
PUB TYPE	Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Evaluation Methods; Focus Groups; Graduate Medical Education; *Graduate Medical Students; Interviews; *Program Evaluation; *Qualitative Research; Surveys
IDENTIFIERS	Stakeholders

ABSTRACT

The purpose of this qualitative study was to develop a program evaluation template to be used for primary care residencies. Programs were reviewed by meta-evaluation, interviews, and a focus group. Interviews and focus groups were held with four primary care program directors, two medical educators, and one accreditation site surveyor. Survey components were the areas evaluated, evaluation beliefs, and seven specific evaluation approaches. Emergent categories from interview and focus group content analysis were: (1) assessment/evaluation areas; (2) methodology; (3) stakeholders; (4) issues related to utility; (5) issues related to feasibility; (6) issues related to propriety; and (7) needs that influence evaluation model choices and examples. Some of the evaluation approaches were not used by the programs. A final program evaluation template was developed to facilitate residency program evaluation. This template is presented as a systematic guide to residency program evaluation. (Contains four tables and six references.) (Author/SLD)

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ED 419 818

Models for Primary Care Residency Program Evaluation

by

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TM028393

Prepared for the American Education Research Association 1998 Annual Meeting
San Diego, CA

Models for Primary Care Residency Program Evaluation

Abstract

The purpose of this qualitative study was to develop a program evaluation template to be used for primary care residencies. Programs were reviewed by meta-evaluation, interviews, and a focus group. Survey components were: areas evaluated, evaluation beliefs and seven specific evaluation approaches. Emergent categories from interview and focus group content analysis were: assessment/evaluation areas; methodology; stakeholders; issues related to utility; issues related to feasibility; issues related to propriety; and needs which influence evaluation model choices and examples. Some of the evaluation approaches were not used by the programs. A final program evaluation template was developed to facilitate residency program evaluation.

Purpose of the Study

Many sponsoring institutions of residency programs have been facing or experiencing corporate downsizing in the last decade, while various stakeholders have raised questions of the effectiveness and efficiency of their residency programs. Program evaluation has become increasingly critical in determining the value and worth of such programs in corporate downsizing decisions. Program directors are being asked by their major stakeholders, funding sources, professional organizations, and beneficiaries to demonstrate not only the merit and worth of their programs, but also their progress in alleviating or solving social problems, and whether these programs are operating in a cost efficient manner as possible. Of equal importance is program accreditation. Many residency directors assess various parts of their program, mainly resident learning. This however, by itself, does not constitute program evaluation. A literature review found very few published studies of meta-evaluation, and/or programs that use several evaluation approaches to evaluate different aspects of the program. The main purpose of this study was to develop a theoretical evaluation model, or template, to be used for primary care

residency programs (family practice, internal medicine, pediatrics, combined medicine/pediatrics) drawing from the evaluation literature, interviews, and based upon a meta-evaluation of two primary care residency programs' evaluation systems.

The following questions were addressed:

I. How are primary care residency programs currently being evaluated? (approaches)

   A. Who are the primary stakeholders?

   B. What are the formally stated purposes of the evaluations?

   C. How has information from the evaluation process been utilized?

II. What might an appropriate evaluation system/template look like?

Theoretical Framework

The conceptual framework of this study was utilization of several evaluation approaches (Deshler, in press) and meta-evaluation (The Joint Committee, 1994). The template was based upon seven evaluation approaches: the Connoisseurship Criticism Model (expertise oriented); the Attainment of Objectives Model and Goal-Free Evaluation Model (objectives oriented); the Differential Model and Experimental Model (decision-management oriented) and the Naturalistic and Participatory Evaluation Model (naturalistic and participant oriented). (See Table 1). Meta-evaluation is the practice of evaluating evaluation processes and products. The meta-evaluation concept provides that evaluations should be judged on their utility, practicality, ethics, and technical adequacy.

Table 1

A Summary of Seven Program Evaluation Approaches

Approach	Orientation	Focus	Suggested Methods of Gathering Data	Strengths	Limitations
Connoisseurship Criticism Model - Experts interview, analyze documents, and make judgments using their own judgment perspectives or those set as standards by the outside professional association that they are representing	Expertise Oriented	Inputs, activities, participation	Document Analyses, Interviews & Questionnaires	Emphasized expert judgment Standards used for evaluation Program goes through a self-study prior to site visit	"Presumed" expertise of reviewers Evaluator judgments may be biased Goal side effects are not evaluated
Attainment of Objectives Model - Evaluators measure the success of a program by measuring its outcomes against its own goals and objectives	Objectives Oriented	Compares inputs to outcomes	Document Analyses, Observation, Interviews & Questionnaires	Simple Measures Objectives	Does not evaluate merit or worth of program and objectives Neglects context, unintended outcomes
Goal-Free - Evaluators identify needs of learners and then compare these needs with what people are actually experiencing as a result of the program	Objectives Oriented	Individual, organizational, & community change	Document Analyses, Observation, Interviews & Questionnaires	Evaluates discrepancies between actual outcomes and objectives	Time consuming Labor intensive, high cost approach
Differential Model - This evaluation approach provides relevant information as a management tool to decision makers. Participation of stakeholders is central to the process	Management Oriented	Program planning through implementation, stakeholder participation	Interviews & Questionnaires, Observation	Evaluates each stage of a program Assesses program efficiency Provides useful information	May result in costly and/or complex evaluations
Experimental Model - This evaluation approach determines whether changes in program outcomes were due to the contributions of the program and not just to life's experiences or other influences	Management Oriented	Causal relationships between activities and individual or organizational change	Document Analyses, Experimental Design with Control Groups	Determines impact and efficiency of a program	Considered more as social research than evaluation Cost, educational liability of denying "treatment"
Naturalistic Model - This evaluation approach's purpose is to understand how a program operates in its natural environment	Naturalistic and Participant Oriented	Activities, participation, & reactions as processes	Observation, Interviews & Questionnaires, Document Analyses	Participant value sensitive Feedback is in beneficiaries language Judgment shifted from evaluator to participants Contextually anchored	If done incorrectly, may be very subjective Time consuming Labor intensive, high cost approach
Participatory Evaluation Model - Educators and learners themselves initiate a critical reflection process focused on their own activities by identifying anomalies and using critical reflection	Naturalistic and Participant Oriented	Anomalies in activities, emphasizes learner participation	Interviews & Questionnaires, Document Analyses	Participants learn more about the program Participants learn more about evaluation Participant "buy-in"	Time consuming

A review of the literature documents that there have been no meta-evaluation studies of residency programs. The only two meta-evaluations found evaluated a specific rotation (Gauger, 1985) and a faculty development program (Sheets, 1985). Many of the published residency program evaluation studies were focused upon assessment, or only utilized a single evaluation approach. The few articles written on program evaluation were theoretically based with little or no studies performed. The models reviewed in those articles included Stufflebeam's CIPP model, and those which focused solely on objectives and outcomes. Table 2 is a schemata which shows the levels of evaluation, whether the focus is outcome and/or process, what the object of evaluation is, and how it relates to the evaluation models reviewed.

Table 2
Summary of Evaluation Levels, Focuses, Objects and Models

Levels of Evaluation	Focus of Evaluation	Object of Evaluation	Approach/Model
Micro	Intended outcomes	Resident, faculty member Rotations, curriculum, educational experiences	Attainment of Objectives
Micro	Unintended outcomes	Resident, faculty member Rotations, curriculum, educational experiences	Goal-Free Evaluation Participatory Evaluation
Micro	Development and decision making	Resident, faculty member Rotations, curriculum, educational experiences	Differential Evaluation
Micro	Context	Resident, faculty member Rotations, curriculum, educational experiences	Naturalistic Evaluation
Macro	Development and decision making	Program	Differential Evaluation
Macro	Intended outcomes	Program	Attainment of Objectives Experimental Evaluation
Macro	Context	Program	Naturalistic Evaluation
Macro	Unintended outcomes	Program	Participatory Evaluation
Macro	Inputs/processes	Program	Connoisseurship Criticism Model
Evaluation Standards	Evaluation	Evaluation processes and products	Meta-Evaluation

Methodology

Interviews and focus groups were given to primary care program directors (n=4), medical educators (n=2), and an accreditation site surveyor (n=1). Reviewed for the literature search were two descriptors: internship and residency; and program evaluation. The two databases searched were the Educational Resources Information Center (ERIC), and Medline, a computerized division of the Medical Literature and Retrieval Systems (Medlars). In addition, related dissertations, program evaluation texts, evaluation journals, meta-evaluation literature and materials related to residency accreditation were examined.

In the first part of this study, case study surveys were accomplished by separately interviewing one family practice and one combined internal medicine/pediatrics residency program director. Each director was administered the case study survey in person by the investigator. For example, each director was asked how program evaluation was accomplished. The program directors were asked for specific examples as to how attainment of objectives evaluation was achieved. If a particular approach was performed, they were next asked how the data from that evaluation approach were utilized. The process for utilization was also assessed.

As the second step of this study, an evaluation matrix was developed based upon the evaluation literature reviewed. Based upon the program directors' feedback from the case study surveys, the evaluation matrix, reviewed evaluation theory and metaevaluation of the programs, a template to evaluate primary care residency programs was developed.

The third step of this study utilized a focus group. The focus group scheduled was comprised of two Ph D. medical educators, one internal medicine assistant residency director, and one pediatric residency director. During the focus group, the same questions were asked as in the previous case study surveys. In addition, the focus group was given the evaluation

template to review. Verbal feedback regarding the evaluation template was also obtained during the focus group.

A second focus group was to be conducted with medical educators who review programs for the ACGME accreditation (AMA, 1996). The same interview guidelines were to be used with this second group as was with the first focus group. Accreditation site surveyors live in many areas of the country. In fact, there are less than two dozen nation wide. The ACGME site surveyors fly to different programs most every week of the year. Because of this, it was impossible to schedule a focus group since they only convene very rarely at national headquarters. Because of these circumstances, in lieu of the second focus group, an individual interview was conducted using the same interview guidelines as the first focus group with an accreditation site surveyor who lived in a region near the researcher.

The fourth step of this study was to refine the evaluation template based upon information received during the focus group and additional interview. A meta-evaluation was performed using data gathered during the family practice and combined medicine/pediatric interviews and document analysis. Based upon the meta-evaluation, feedback was presented to both residency directors individually about the current evaluation systems in place. For a member check, the two residency directors were also given a copy of the revised evaluation template for their comments on utility, feasibility, and any other pertinent information or feedback. Both residency directors were also asked to review the categories which emerged from the content analysis.

The original contact with each participant was made by telephone to explain the project and to request an interview. No requests for interviews were refused. Telephone contact was again made to confirm the date, time, and place of the on-site interview. Relevant documents such as evaluation instruments, Internal Review committee reports, accreditation reports, and

program brochures were examined to provide additional data. The data collection phase began in March of 1996 and concluded in August of 1996. A timeline of research is provided in Figure 1.

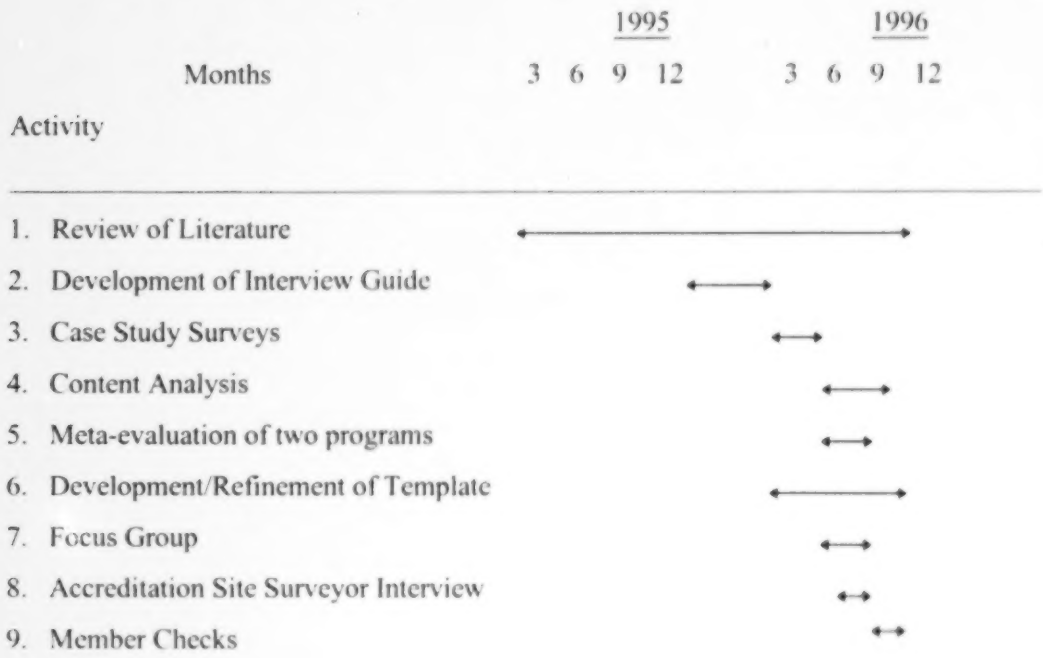

Figure 1. Timeline of research activities.

Findings

After performing meta-evaluation for the family practice and the combined medicine/pediatrics programs, the strengths and weaknesses of their evaluations can be summarized as follows:

1. For program evaluation, the main focuses of the program evaluations were accreditation and program improvement. The approaches for gathering the information was verbalized, but not written.

2. Both programs were thoroughly described in their respective RRC applications.

3. Only the program director, some of the faculty members, sponsoring institution administration, and affiliated medical schools saw the evaluation results, although other

stakeholders such as residents and patients had a voice in the process. This is not to imply all stakeholders should have received the information in the same format and detail.

4. The evaluations performed in the two residency programs were ethical and considered factors such as interpersonal skills and political ramifications.

5. Although much information was gathered, the evaluation process was not always written down for reference. The evaluation process seems to have remained constant over the past several years. It was not a priority to evaluate the process, nor was there adequate time. If a new faculty member or administrator were hired by the program, they would have to review the resident evaluation folders, the faculty files, and the RRC documents to see the type of data gathered; where it was gathered; and how it was collated and analyzed.

6. One major area that was not addressed by the evaluations performed by these two programs was unintended outcomes. Unintended outcomes were not specifically addressed unless they result in an incident which is subsequently reviewed.

7. There was no reference to validity, reliability, and objectivity in any written materials on how the programs evaluate themselves.

8. Considerable time was spent gathering data from residents on faculty or rotations that was not always collated or used.

9. The written standards used by both programs were those provided by the RRC. These criteria are vague. The family practice program has additional criteria provided by their Residency Assistance Program (RAP) which was based upon the RRC but which was spelled out in slightly more detail and had higher standards than the RRC's minimum expectations for accreditation.

10. Judgments or recommendations concerning the entire program come mainly from the RRC and the institution's Internal Review committee. The program directors normally made

decisions concerning various components of the program, such as implementing changes in order to improve a specific rotation.

11. The final reports in these two programs concerning program evaluation were written by people external to the program: the RRC; and the Internal Review committee. A complete report was viewed by top administration and the program director, while a summary was presented to other faculty and/or interested parties. The faculty members had opportunities to see the entire report if they desired.

After speaking to all the study's participants, program evaluation generally occurred only during accreditation and internal review processes. The programs tended to use fewer data sources when evaluating areas or people other than residents. All of the interview and focus group participants noted use of the Connoisseurship Criticism Model, the Attainment of Objectives Model, Differential Evaluation Model, and Participatory Evaluation Model when evaluating their programs. To a very limited extent, the Naturalistic Evaluation Model and Meta-evaluation were utilized. The Goal-Free Evaluation Model and Experimental Evaluation Model were not utilized by the residency programs. Two principal reasons were that the program directors were either unaware of them, or did not have the resources available to perform them. Although the program directors were not familiar with the Goal-Free Evaluation model, they were very intrigued by it. Major categories which emerged from the interview and focus group content analysis were: assessment/evaluation areas; methodology; stakeholders; issues related to utility; issues related to feasibility; issues related to propriety; and needs which influence evaluation model choices and examples (see Table 3). The major stakeholders which emerged from the content analysis were the program director, faculty and residents. Due to this finding, the final program evaluation template was divided into three categories: faculty, resident, and

program. Based upon the meta-evaluation, interviews, and focus groups, and member checks a final template was developed.

Table 3
Categories Program Evaluation Derived from Content Analysis.

Categories		Category Components (# of responses)	
1.0	Assessment/Evaluation Areas	1.1	Curriculum (22)
		1.2	Rotations/Special Courses (7)
		1.3	Budget (5)
		1.4	Resident Applicants (5)
		1.5	Residents (18)
		1.6	Faculty (15)
2.0	Methodology	2.1	Competencies/Accountabilities (5)
		2.2	Questionnaires/Surveys (3)
		2.3	Interviewing (1)
		2.4	Observation (4)
		2.5	Document Analysis (4)
		2.6	Peer Evaluation (2)
		2.7	Self-Evaluation (5)
		2.8	Standardized Exams (3)
3.0	Stakeholders	3.1	Faculty (3)
		3.2	Nurses (1)
		3.3	Residents (4)
		3.4	Patients (1)
4.0	Issues Related to Utility	4.1	Report Timeliness/Dissemination (1)
		4.2	Values Identification (1)
		4.3	Evaluator Credibility (12)
5.0	Issues Related to Feasiblity	5.1	Practical Evaluation Procedures/Resources (9)
		5.2	Evaluation Cost Effectiveness (1)
6.0	Issues Related to Propriety	6.1	Ethics/Equity (2)
7.0	Needs which Influence Evaluation Model Choices and Examples	7.1	Context Analysis (3)
		7.2	Defensible Information Sources (1)
		7.3	Impartial Reporting (1)
		7.4	Program Documentation (4)
		7.5	Purpose (9)
		7.6	Quantitative/Qualitative Analysis (6)
		7.7	Valid/Reliable Data (10)
		7.8	Expert Review (2)
		7.9	Objective/Outcome Assessment (5)
		7.10	Observational Evaluation(5)
		7.11	Needs/Planning Assessment (7)
		7.12	Controlled Studies (4)
		7.13	Evidence-Based Reflection (8)
		7.14	Evaluation Systems Evaluation (12)

Revised Evaluation Template

Program directors are likely to be unaware of the theoretical underpinnings of evaluation models and use techniques for pragmatic reasons and felt needs such as accreditation and graduation requirements. A template will give directors a systematic way of collecting relevant, useful data to make informed judgments about the merit or worth of their residency program. It will also afford them opportunities to gather data that might not have been taken into account before, or in ways that might not have been considered. By using an evaluation template which is theoretically based, and utilizing meta-evaluation, primary care residency directors can use the most appropriate evaluation approach for various situations at various points in time in their programs.

The data provided by the case study surveys, meta-evaluation, content analysis and member checks give an insight into the complexities of program evaluation for residencies. Table 4 presents the revised evaluation template. The revisions were based upon comments made during the member checking process while participants reviewed the original template. These revisions and additions are indicated in the revised template in Table 4.

Several areas of the revised evaluation template were not currently being evaluated. Resident evaluation areas included: identifying applicant demographics which predict those interested in primary care, and mock orals. Template items under faculty evaluation currently not being done included: feedback from nurses and patients, self-assessment, peer evaluation (including observation of teaching skills), auditing process for residents, and procedures taught. The third category, program evaluation, currently lacks overall procedures and diagnoses taught, external reviews by organizations or other program directors, and assessment of outcomes. All other items were performed in the two programs, with the exceptions of observation. The combined medicine/pediatrics program uses audiotapes, videotapes, and CEXs, while the family

practice program uses videotapes and OSCEs. The other areas mentioned above are items to be considered in the future for program evaluation. Using the categories which emerged from the content analysis, those items being done met those criteria identified in the categories such as propriety, utility and feasibility. Those not being done are the result of not having enough time, money or personnel.

Table 4

Revised Program Evaluation Template

Faculty Evaluation (all information stored in evaluation folders for each individual - databases of aggregate data maintained for program evaluation)

1. Before entry into the program - faculty applicants
   a. Needs of program matched with faculty applicant qualifications
   b. Review letters of recommendation, board certification recertification and licensure, comments made by interviewers.
   c. Obtain feedback from nurses and patients if available. *

2. Monthly/Rotational
   a. Evaluations by residents medical students

3. Each Academic Year
   a. Self-assessment
   b. Peer evaluation
   c. Collated evaluations by residents medical students reviewed
   d. Chart audits reviewed
   e. Auditing process for residents reviewed*
   f. Procedures taught (procedures log) reviewed
   g. Patient satisfaction questionnaires reviewed
   h. Individual faculty goals and progress towards goals reviewed (faculty development)
   i. Videotapes and/or observations of teaching sessions reviewed
   j. State licensure and board certification maintained
   k. Incident reports reviewed
   l. Awards reviewed
   m. Research reviewed
   n. Publications reviewed
   o. Courses/lectures given reviewed
   p. Practice styles reviewed
   q. Membership and roles in regional, state, and national professional organizations*

3. Faculty termination
   a. Exit interview

(table continues)

Table 4 (continued)

Resident Evaluation (all information stored in evaluation folders for each individual - databases of aggregate data maintained for program evaluation)

1. Before entry into the program - resident applicants
   a. Review letters of recommendation, dean's letter, board scores, comments made by interviewers, licensure is attainable and granted
   b. When a resident applicant is given a patient case scenario, residency faculty assess each applicant's ability to diagnose and manage based upon information given.
   c. Residents coming into a program with prior credit, need additional official documentation and need to apply in an ethical manner.[a]
   d. Assess interpersonal skills.[a]
   e. Identify applicant demographics which would predict those individuals interested in primary care, and select applicants accordingly.[a]
2. Each Academic Year
   a. 1st month -
      1. Objective Structured Clinical Exams (OSCEs) or Clinical Exams (CEX)
      2. Self-Assessment - knowledge base, attitudes, skills
   b. Each month/rotation
      1. Evaluations by attendings/faculty
      2. Evaluations by senior/fellow residents
   c. Every six months
      1. Chart audits review
      2. Procedure/diagnosis documentation reviewed
      3. Patient satisfaction questionnaires reviewed
      4. Rotation evaluations by faculty, staff and fellow residents reviewed
      5. Individual resident goals and progress towards goals reviewed
      6. Videotapes of patient encounters reviewed
      7. Audiotapes of patient encounters reviewed
      7. Practice styles reviewed
      8. Conference attendance and conference presentations reviewed
   d. Once a year -
      1. In-Training Exams
      2. Licensure maintained
      3. Self-Assessment
   e. As needed -
      1. Incident reports reviewed
      2. Objective Structured Clinical Exams[b]
      3. Mock Orals[a]
3. Graduation
   a. Exit interview
   b. Review specialty board results
   c. Each year, graduate surveys mailed one year after completion of residency program

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(table continues)

Table 4 (continued)

Program Evaluation Template

Program Evaluation (databases of aggregate data is maintained for evaluation)

1. Planning a new program
   a. Ad Hoc committee formed consisting of program stakeholders
   b. RRC mandates/guidelines reviewed[a]

2. Monthly/Rotational
   a. Evaluations by residents/medical students of rotation logistics (how the rotation occurs)
   b. Evaluations by residents/medical students of rotation content (what residents learned)[a]

3. Each Academic Year
   a. Review overall In-Training Examination results
   b. Collated evaluations of rotation logistics by residents/medical students reviewed
   c. Collated evaluations of rotation content by residents/medical students reviewed[a]
   d. Chart audits/quality assurance reviewed
   e. Overall procedures taught/diagnoses managed reviewed
   f. Patient satisfaction questionnaires reviewed
   g. Overall faculty goals and progress towards goals reviewed/faculty development
   h. Descriptions of learning environments/processes written down
   i. Collated results of graduate surveys reviewed
   j. Collated results of resident applicants reviewed
   k. Incidents reviewed[b]
   l. Conferences reviewed
   m. Program budget reviewed
   n. Curriculum needs identified on a continual basis[a]
   o. Existing curriculum reviewed on a continual basis[a]
   p. Review evaluation reports from previous year(s)
   q. External reviews by organizations such as RAP[a]
   r. Inviting well known program directors for a site visit[a]
   s. Review organization/institution mission and vision statements and associated outcomes[a]

4. Accreditation
   a. Accreditation reports submitted when indicated
   b. Internal review conducted midway between accreditation time frames

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Note. [a] indicates revisions/additions from original template, [b]as incidents occur or to assess problem areas and implement changes (in addition, OSCEs may be used to assess 1st year residents during July--their first month, and again during February in order to have objective data to determine promotion to the next year of training).

Implications

Just as the program director considers several educational alternatives and then selects the most appropriate approach for educating residents, the process should be the same when performing evaluation. Performing meta-evaluation is one aspect of program evaluation which should be considered whenever possible. The programs in this study did not practice the process of meta-evaluation. By performing meta-evaluation, the residency director not only considers who the stakeholders are, but also what the purpose of the evaluation is, what approaches will be used, what issues will be addressed, what political considerations should be taken into account, what standards will be used, and what resources are available. It also makes the director consider broader issues such as practicality, usefulness, and ethics.

Program evaluation plans need to be developed and written, as do research proposals and findings. The problems or issues being addressed should be written, and the process or methodologies used should be described in detail. Justification for using theoretical evaluation models should be given. Reliability, validity, and objectivity should also be addressed. Findings and conclusions should not only be written down, but also distributed to the stakeholders in an appropriate format.

The programs studied tended to use fewer data sources when evaluating areas or people other than residents. Assessment of residents consisted of data from many different sources such as videotapes, audiotapes, standardized exams, OSCEs, written evaluations from rotation attendings and nurses, self-evaluation, procedure documentation and competencies. Faculty, curriculum and programs should be assessed or evaluated in a similar manner, utilizing as many sources as are useful and feasible.

Argyris (1984) states that "organizational learning is a process of detecting and correcting error" (p. 46). Residency programs can learn from the information provided from evaluations as

well. Argyris (1984) describes what he refers to as single loop learning and double loop learning. Single loop learning can be compared to when a resident is videotaped in an out-patient setting at a specific time. The videotaping occurs, then it stops. Double loop learning takes this a step farther and asks why this particular resident is being videotaped, or what the purpose behind videotaping is. In other words, the underlying organizational policies and objectives are reviewed during double loop learning. Program evaluation should consider addressing the inputs, processes, outcomes, context and decision-making processes in order to achieve a more balanced evaluation.

Residency programs could probably benefit from faculty development in the areas of evaluation and program evaluation. By utilizing a program evaluation template, and performing meta-evaluation, program directors will hopefully not only be able to obtain the "big picture" but also critically reflect on their programs.

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